

### **DETAILED ACTION**

This office action is in response to an RCE dated 3/23/2010 as well as an interview on 5/25/2010 where various USC 112 issues were addressed for interpretation purposes for this office action.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/23/2010 has been entered.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 10 lines 6 and 9 state "the pressure chamber" but this is unclear since there is no antecedent basis. This will instead be interpreted as "the delivery chamber". This interpretation was aided via a telephone interview with the applicant indicated above.

5. Claim 10 states that "a center of a bore...is offset" yet it unclear what is meant by "center of a bore". The central point? Centerline? For this examination, it has been interpreted to be that the center of the bore can be the axial centerline of the bore or the physical central point.

6. Claim 10 states that there is a pump chamber and it is unclear if that chamber encompasses the delivery and intake chambers or if it is separate. For the purposes of this

examination, it will be interpreted that the pump chamber encompasses both of these other chambers.

7. Claim 11 line 3 states "a prestressed spring" yet there is already a prestressed spring from claim 10 and it is unclear if this is a new element. However, it has instead been interpreted to be in reference to the previously claimed prestressed spring.

8. Claims 25-29 line 2 states "a bore" yet this is unclear because there is already a bore. It will be interpreted that this is instead "the bore". These claims also state "a chamber" yet it is indefinite because there are various chambers and it is unclear if this is associated with any of them. Should this one have a title like the others? That may clear confusion. This chamber has been interpreted broadly to encompass any chamber or combination of chamber in the apparatus.

9. It appears that each time this application is submitted for examination new errors are found. It is strongly suggested that not only the above errors are fixed, but **also that the application is thoroughly examined for (1) new errors and (2) potential new antecedent errors caused by amendment.**

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 10, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funk (2,636,440) in view of applicant admitted prior art (AAPA).

12. In re claim 10, Funk discloses a housing (14) that contains a pump chamber (12, 10, 13), in which two delivery elements are contained (8, 9), the elements delivering fluid to a delivery

chamber (13) from an intake chamber (12); a pressure limiting valve (28) limiting the pressure prevailing in the delivery chamber, the pressure limiting valve having a valve piston (29) inside the housing, the valve piston being acted on in a closing direction by a prestressed spring and being acted on in an opening direction by the pressure in the pressure chamber and when a predetermined pressure is exceeded, the valve piston opens a connecting conduit (21) from the delivery to the intake chamber; Wherein the pressure prevailing in a pressure chamber (22) influences a force on the valve piston such that as the pressure in the pressure chamber decreases, the force on the valve piston in the closing direction increases.

13. However, first, Funk fails to further disclose a filter. Nevertheless, AAPA discloses (note further the discussion of "Prior Art" on page 1 of the specification, specifically in paragraph 3, line 15) "usually the pump is preceded by a filter...or is followed by a filter". And, if the pump has a filter on either side, the limitations claimed regarding the filter would be inherent. Adding a filter allows for more efficient and longer lasting pumping. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Funk in further view of AAPA in order to add a filter to the system.

14. Note that the central point of the bore of Funk is clearly offset from the connecting line of the two rotary elements. However, if this were interpreted (this is discussed in the USC 112 section above) to be, instead of the central point, the axial centerline of the bore, Funk/AAPA may fail to disclose that the central axis of the bore of the valve piston is offset from the connecting line between the axes of both rotary elements. Nevertheless, no criticality for this feature has been disclosed. And because of this, and further because of the fact that moving the valve piston off-center would not interrupt or change the operation of the invention in the slightest, it would have been obvious to one having ordinary skill in the art to form this bore slightly off-center. This could give the advantage of a special spatial configuration that one

having ordinary skill in the art would easily recognize and be able to modify the system of Funk/AAPA accordingly.

15. In re claim 19, Funk/AAPA discloses the connecting conduit between the delivery chamber and the intake chamber embodied in the form of a groove (see intake chamber of Funk) let into a housing part facing the end surface of the at least one delivery element and the valve piston controls the passage through this groove/intake chamber of Funk.

16. Claims 10-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zenith (GB 750,673) in view of applicant admitted prior art (AAPA).

17. In re claim 10, Zenith discloses a housing (2, 35, and other housing) that contains a pump chamber (including 13 and the intake and outtake chambers), in which two delivery elements are contained (5, 6), the elements delivering fluid to a delivery chamber (15) from an intake chamber (14); a pressure limiting valve (23) limiting the pressure prevailing in the delivery chamber, the pressure limiting valve having a valve piston (23, specifically the piece that rests against the rotary elements) inside the housing, the valve piston being acted on in a closing direction by a prestressed spring (26) and being acted on in an opening direction by the pressure in the delivery chamber and when a predetermined pressure is exceeded, the valve piston opens a connecting conduit (22) from the delivery to the intake chamber; wherein the pressure prevailing in a pressure chamber (25) influences a force on the valve piston such that as the pressure in the pressure chamber decreases, the force on the valve piston in the closing direction increases.

18. However, first, Zenith fails to further disclose a filter. Nevertheless, AAPA discloses (note further the discussion of "Prior Art" on page 1 of the specification, specifically in paragraph 3, line 15) "usually the pump is preceded by a filter...or is followed by a filter". And, if the pump has a filter on either side, the limitations claimed regarding the filter would be inherent. Adding

a filter allows for more efficient and longer lasting pumping. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Zenith in further view of AAPA in order to add a filter to the system.

19. Note that the central point of the bore of Zenith is clearly offset from the connecting line of the two rotary elements. However, if this were interpreted (this is discussed in the USC 112 section above) to be, instead of central point, the axial centerline of the bore, Zenith/AAPA may fail to disclose that the central axis of the bore of the valve piston is offset from the connecting line between the axes of both rotary elements. Nevertheless, no criticality for this feature has been disclosed. And because of this, and the fact that moving the valve piston off-center would not interrupt or change the operation of the invention in the slightest, it would have been obvious to one having ordinary skill in the art to form this bore slightly off-center. This could give the advantage of a special spatial configuration that one having ordinary skill in the art would easily recognize and be able to modify the system of Zenith/AAPA accordingly.

20. In re claim 11, Zenith discloses the pressure chamber delimited by a moving wall (24), one side of which is acted on by the pressure prevailing in the pressure chamber (25) and the other side of which is acted on by a prestressed spring (26) that pushes the wall (24) toward the valve piston (23) in its closing direction.

21. In re claim 12, Zenith discloses the moving wall (24) supported against the valve piston (23) by means of a rod (the stepped portion of the valved piston that the unlabeled nut is screwed on to).

22. In re claims 13-14, Zenith discloses the moving wall (24) is embodied in the form of a diaphragm.

23. In re claims 15-18, Zenith discloses the valve piston (23) at least partially delimiting the pump chamber (13) in the direction of the rotation axis of the at least one delivery element (5,

6), wherein the closing spring (26) presses the valve piston (23) against the end surface of the at least one delivery element (5, 6) oriented toward it, which end surface functions as a valve seat, and wherein the pressure prevailing in the pressure chamber (25) acts on at least part of the end surface of the valve piston (23) oriented toward the at least one delivery element (5, 6). This is because since the pressure in the pressure chamber affects the valve piston, it affects therefore each end surface.

24. In re claims 19-21, Zenith discloses a connecting conduit (21) between the delivery chamber (13) and the intake chamber (14) embodied in the form of a groove let into a housing part facing the end surface of the at least one delivery element (5, 6) and the valve piston controls the passage through this groove.

25. In re claim 22, with reference to figure 4, Zenith discloses that as pressure in the delivery chamber (13) increases, the valve piston (23) opens an ever greater through flow cross section in the connecting conduit (21).

26. In re claims 23-24, with reference to figure 4, Zenith discloses the diameter of the valve piston (23) greater than the width of the connecting conduit (21).

27. In re claims 25-29, Zenith discloses the valve piston (23) guided so that it is able to move in a bore (23, 25, 34) of a housing part, and wherein the intake chamber (14) is connected to a chamber (25, 30, 29) that is delimited in the bore (23, 24, 34) by the rear surface of the valve piston (23) oriented away from the end surface of the at least one delivery element (5, 6).

#### **Examiner's suggestions for allowance**

28. The features discussed in the application appear to be novel yet not as claimed. It is recommended that (1) all of the 112 issues are overcome, (2) potential other 112 issues are corrected [please thoroughly go over the claims] (3) the filters be claimed such that there is a direct connection between the filter and the pressure chamber such that none of the other

chambers are between the filter and the pressure chamber along this connection and (4) properly claim both springs, and state how the valve piston and the moving wall are separated by the housing which causes the two pieces to not physically contact each other. Other claimed differences between the prior art discussed above and the instant application are welcome but the examiner suggests that the instant application's pressure chamber is what is concentrated on.

### ***Response to Arguments***

29. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TODD D. JACOBS whose telephone number is 571-270-5708. The examiner can normally be reached on Monday - Friday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit: 3746

Page 9

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3746

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